

PUBLIC

**HITACHI**  
Inspire the Next



IEEE Powertalks: 2024

**Change Management: Capitalizing on digitalization for a predictable energy Transition:**

17 September



“  
Electricity will  
be the backbone  
of the entire  
energy system

**01**

Accelerated shift from fossil-based to renewable power generation

**02**

Growing electrification of Transportation, Industry and Buildings sectors

**03**

Sustainable energy carriers, complementary to direct electrification

## Fast facts

“

Global electrification will be more than 50% of total energy demand

“

Electrification improves energy efficiency

“

All market sectors converting towards electrification

“

Energy sector-coupling beneficial

## So what?

Digital and energy platforms are needed...

...to manage the enormous power system energy transition challenges:

increased complexity  
additional capacity

**for reduction of CO<sub>2</sub> emissions**

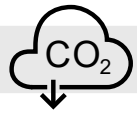
Accelerating the transition to a carbon-neutral energy system requires adapting and adopting policies and regulations to enable technology and new business models to support Scalable, Flexible and Secure energy systems

# Change Management: Through a Digital Lense

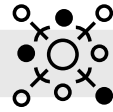
## Key aspects to consider:

1. **Alignment with Organizational Goals:**
  - This helps in defining clear objectives and outcomes.
2. **Agility and Iteration:**
  - The change management process itself needs to be agile, iterative, and incremental to keep up with the fast-paced environmental shifts.
4. **Employee Empowerment:**
  - This involves providing adequate training and support.
5. **Cultural Shift:**
  - Digital transformation is not just a technological shift but also organizational architecture one.
6. **Risk Mitigation:**
  - Effective change management helps in mitigating risks associated with digital transformation, such as resistance due to Status Quo and misalignment with organizational objectives.

# Why: Market Complexity increasing...



**DECARBONIZATION**



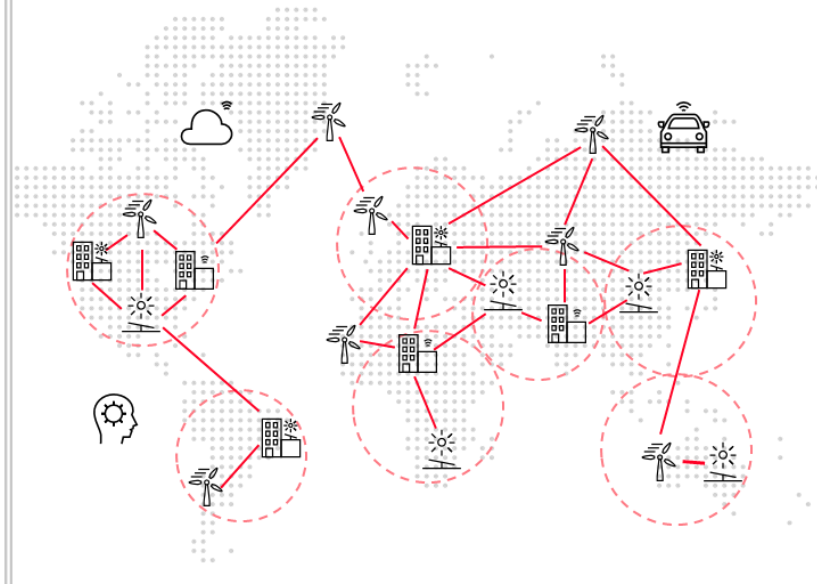
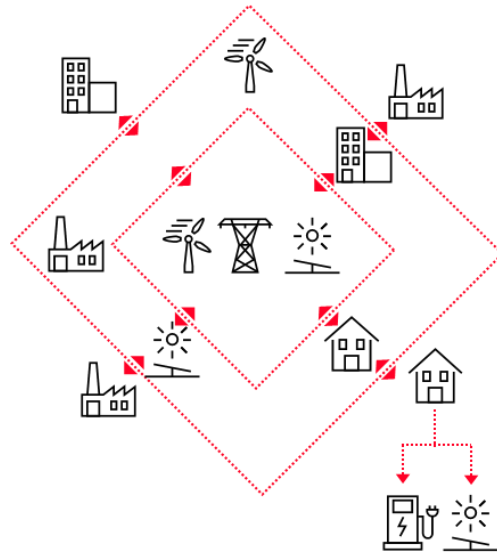
**DECENTRALIZATION**



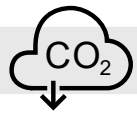
**DIGITALIZATION**

◀ Today

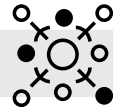
Tomorrow ▶



# Why: Market Complexity increasing...



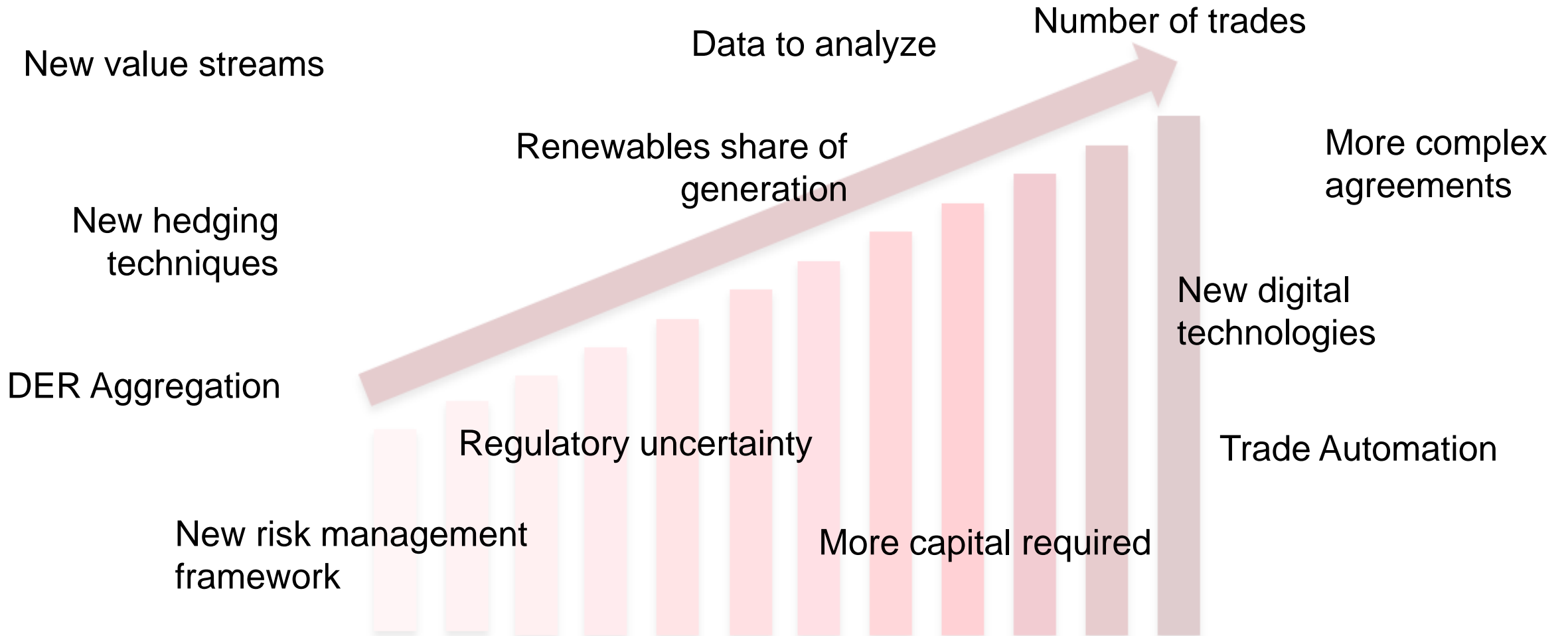
**DECARBONIZATION**



**DECENTRALIZATION**

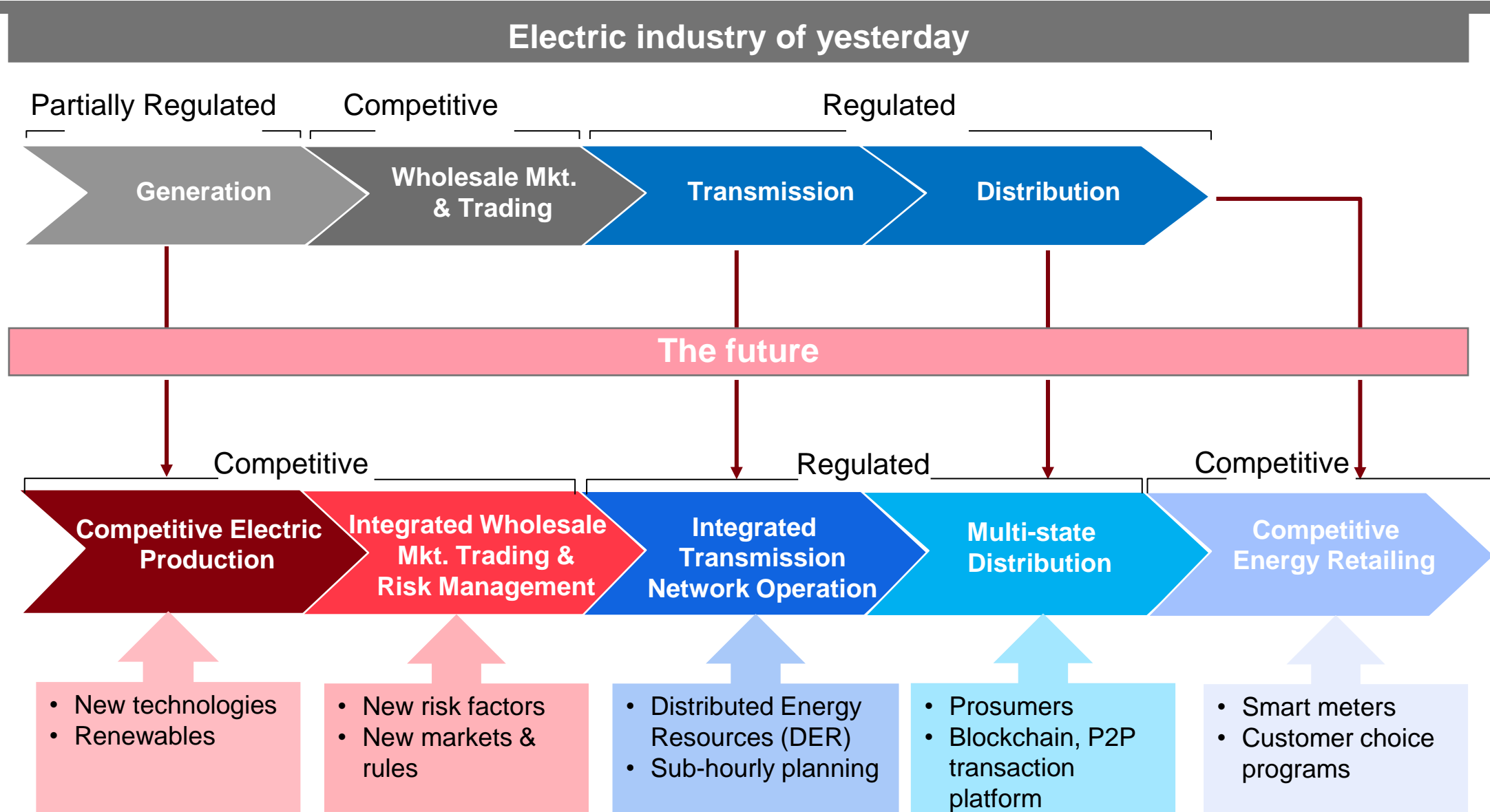


**DIGITALIZATION**



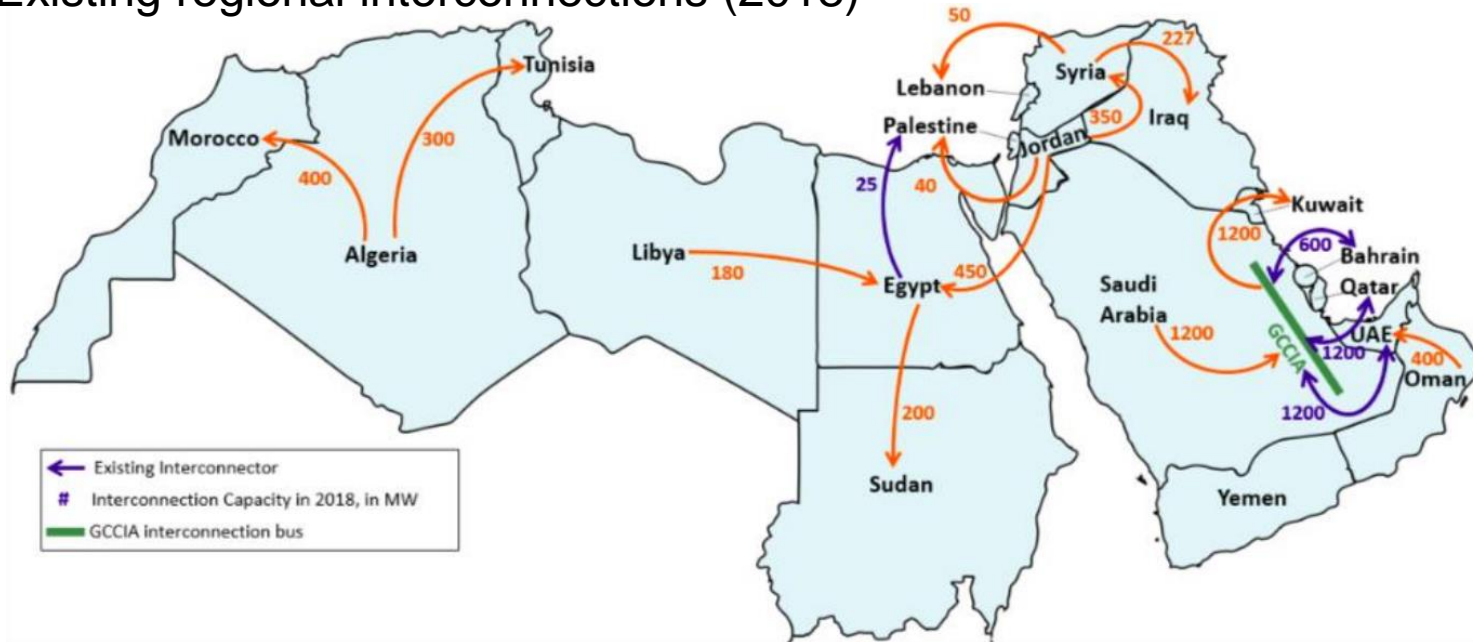
# Why: Electricity Market – An Industry Shift

From a VIB to a business with a focus on customers and competition

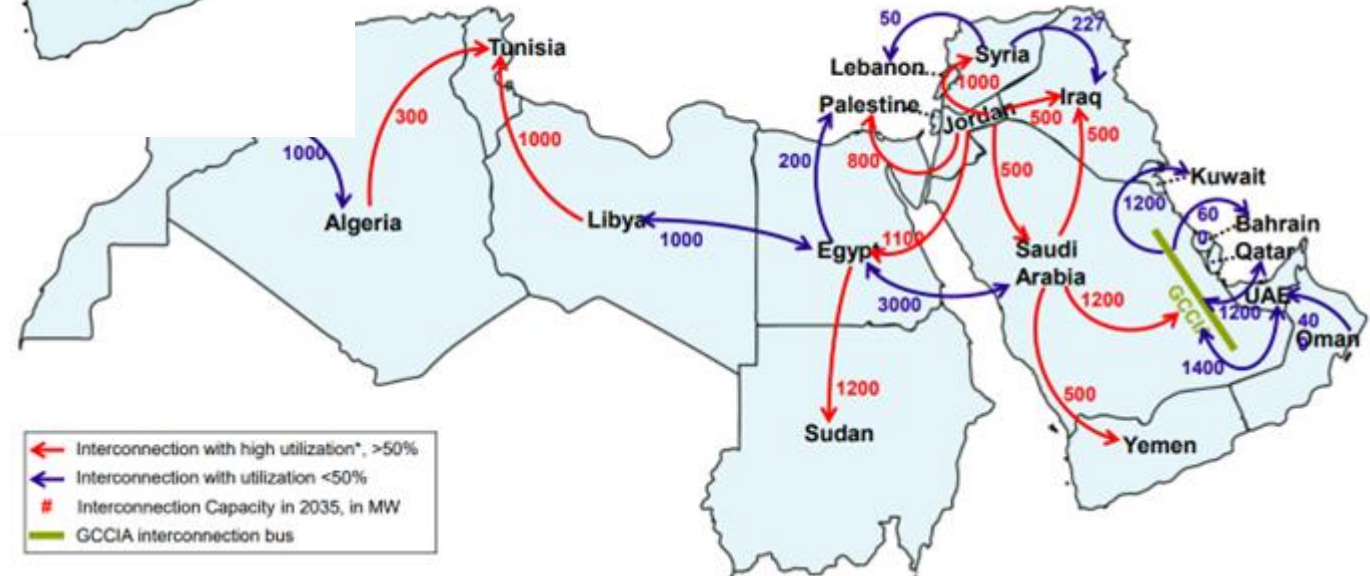


# WHY: The Electricity Market – An Industry Shift

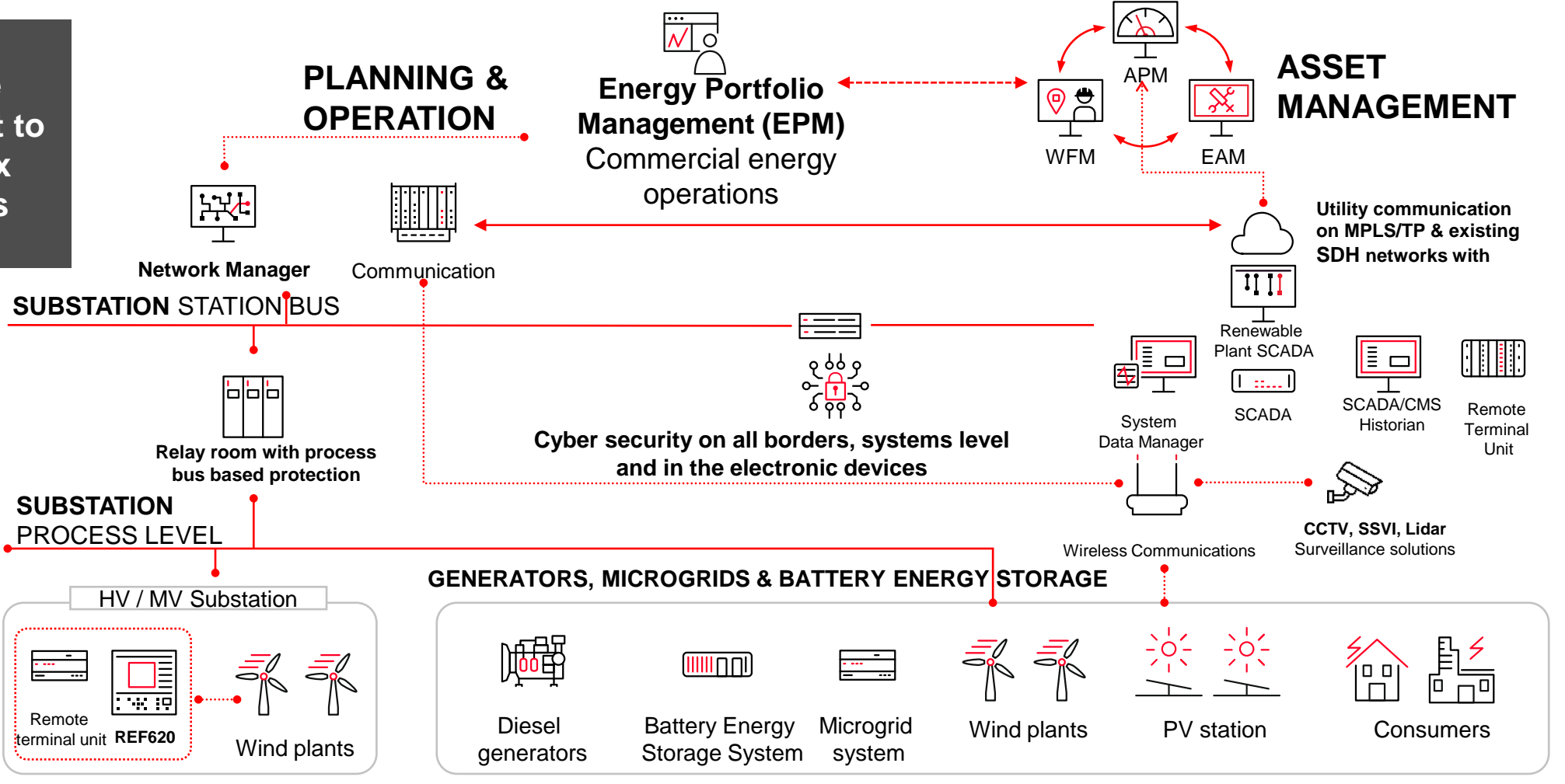
Existing regional interconnections (2018)



...versus targeted interconnections in 2035



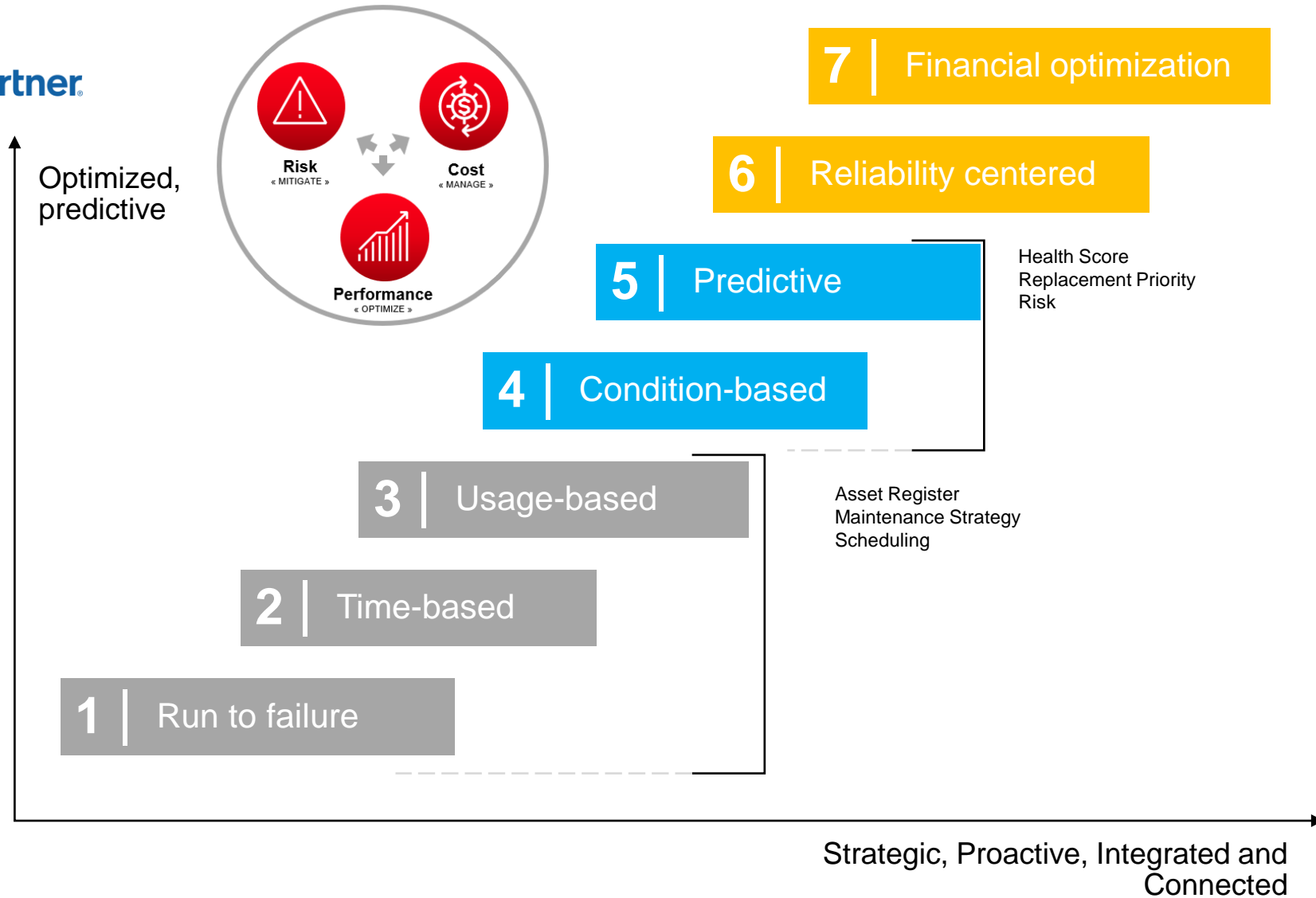
How we connect to complex systems



From field to boardroom

Reliable power wherever & whenever it's needed

Gartner



## EAM



### Asset Investment Planning

- Optimize Investment Alternatives



### Strategy Management

- Provides Alternative Maintenance Strategies
- What-If Analysis
- Balance of Risk and Costs
- System Risk Models (RAM=Reliability, Availability, Maintainability Models)



### Reliability Modelling

- Definition of Reliability Models
- Calculation of RuL, CoF



### Asset Performance Management

- Predicted Condition & HI Calculation
- Data Collection
- Enable Predictive Maintenance



### FMECA

- Definition of FMEA



### Asset Management

- Asset Register
- Total Cost of Ownership
- Operational Strategy (Standard Jobs)



### Work Management

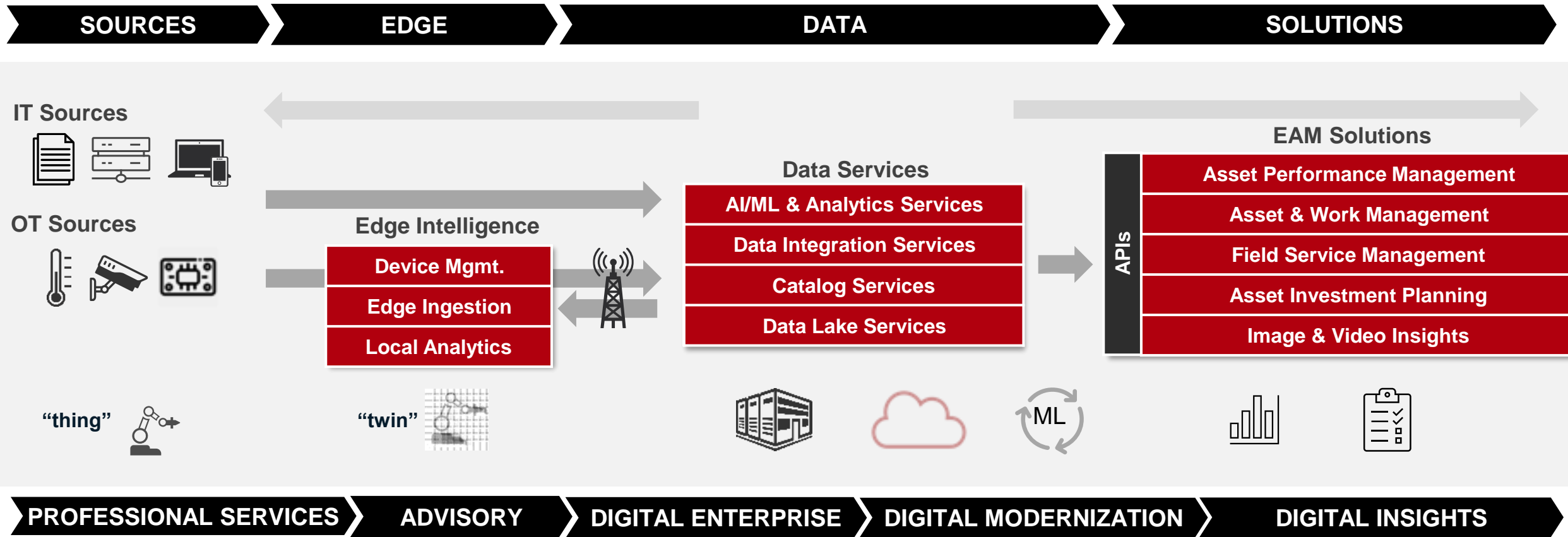
- Resources
- Work Orders
- Field Service
- Vegetation Management



### Materials Management

- Parts Inventory & spares optimization
- Purchases

# Pen Strokes to Key Strokes..



**Delivers actionable insights from data to generate better business outcomes**

# Asset, task and team visibility

Map view with:

- Assets with health condition
- Work: active Work Orders
- Track Devices

The image displays two screenshots of the LUMADA software interface, demonstrating map-based asset and work order visibility.

**Top Screenshot: Asset View**

- Asset:** T47 - High Risk Transformer
- Health Score:** 4
- Description:** Transformer Station 47 D-152207
- Organization:** DE\_BU
- Potential Work (14):**
  - Project Option T47- Replace transformers with increased load and relocate old transformer
  - Project Option T47- Replace transformers with similar model
  - Project Option T47- Install monitoring with centralized data analysis
  - Project Option T47- Install monitoring for 9 Gas and Moisture
  - Project Option T47- Transformer Oil

**Bottom Screenshot: Work Order View**

- Work Order ID:** WOR-00000256
- Description:** WP Turbine Inspection - 05
- Work Type:** Preventative
- Scheduled Start:** 3/31/2022, 2:10:00 PM
- Scheduled End:** 4/1/2022, 2:10:00 PM
- Priority:** 2
- Assigned To:** [User]
- Required By:** 4/5/2022, 2:05:00 PM

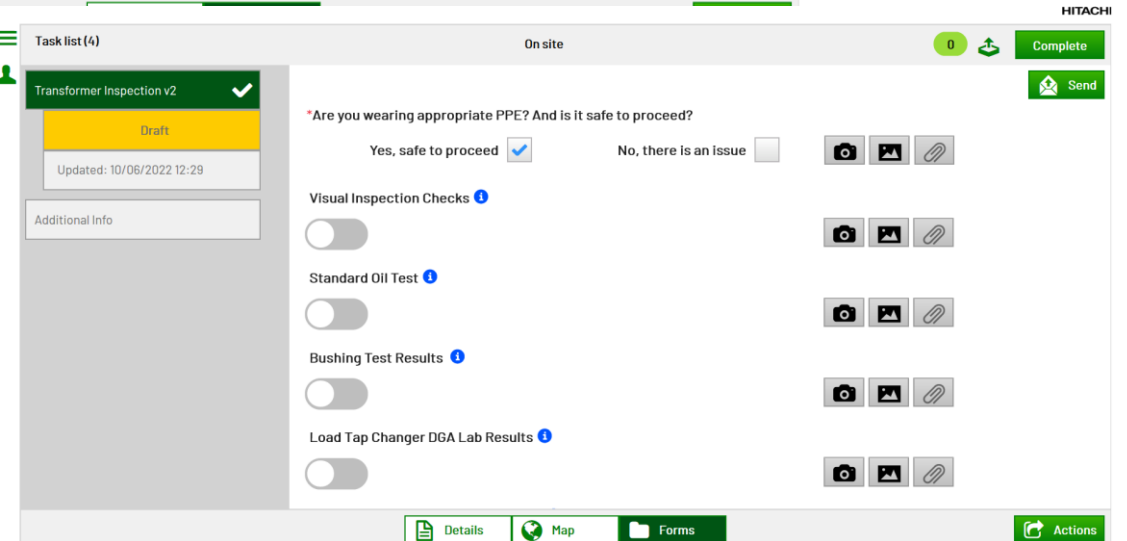
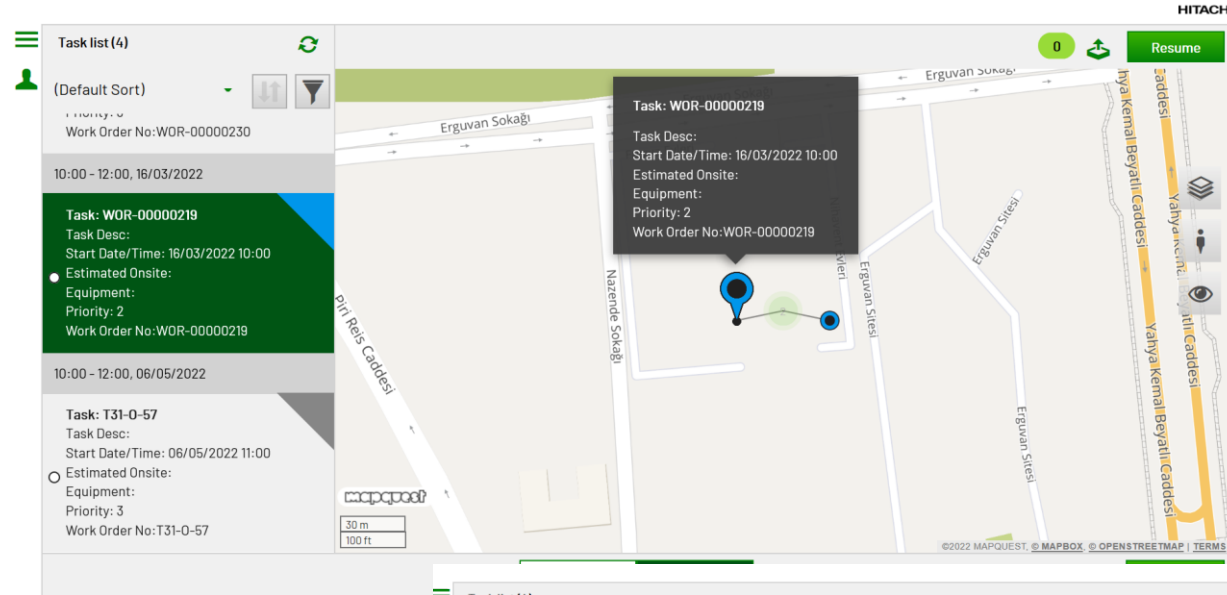
Mobile application installed in telephones or tablets that guide field workers on their daily activities.

- Map view,
- Itinerary, how to get to site.
- Work Order details.
- Dynamic form. Step by step procedure to follow.
- Work order related documents.
- Feedback from field worker: Picture, document, measurements taken.

This tool optimizes the field work by providing the right information to the crews.

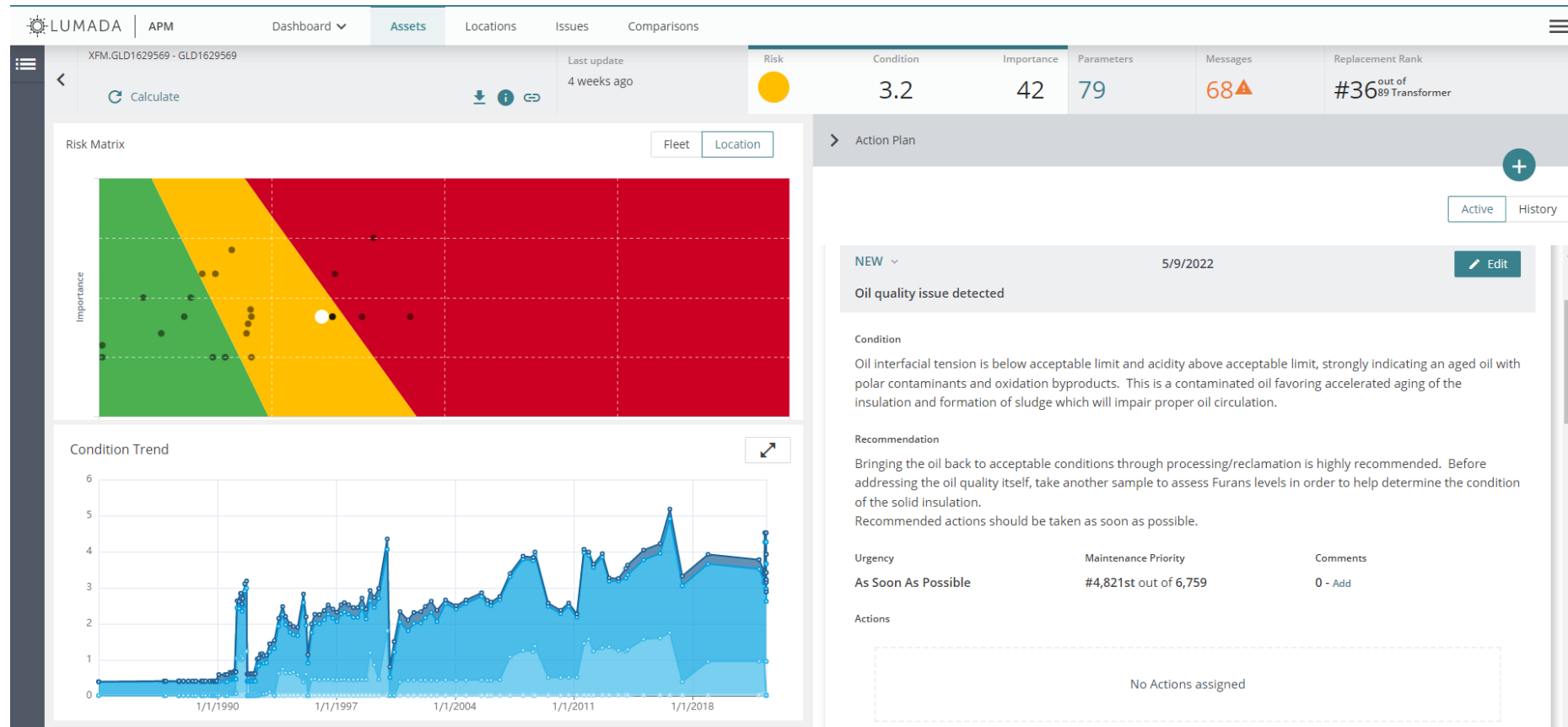
Additionally, thanks to the steps by step procedures and checklists, you can ensure safety and quality of works.

All of this while keeping control of the activities and receiving immediate feedback of field work in Lumada EAM.

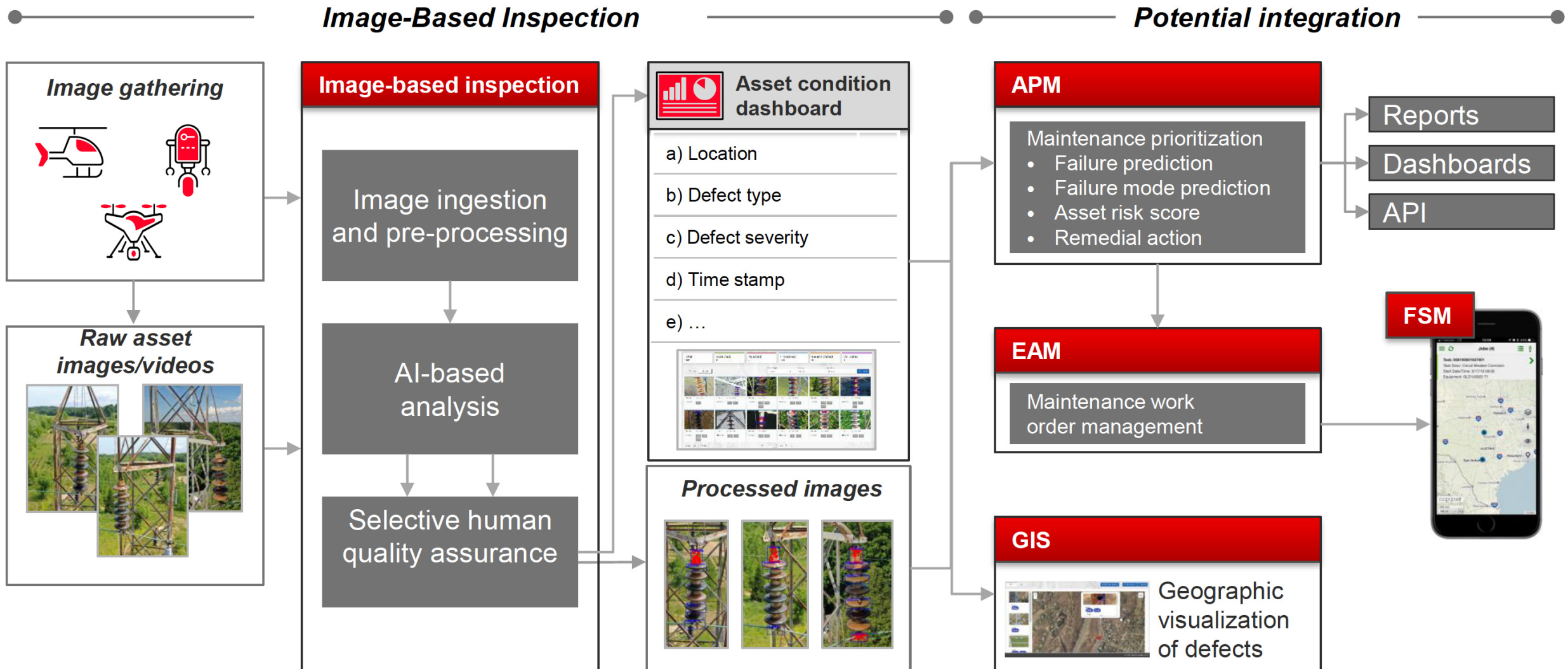


This Software Solutions uses physical models of the assets to know their health index as well as to provide recommendations on maintenance activities and prognosis of their health.

APM is designed to provide health and performance insights to prevent critical asset failures while optimizing asset lifecycle costs. Leverage online and offline data to drive more intelligent, risk-based approaches to asset management.



Transformer fleet status and particular asset condition plus recommended actions.



## Remote + autonomous inspections and analytics from video, LiDAR, and thermal cameras



Virtually maneuver through your infrastructure



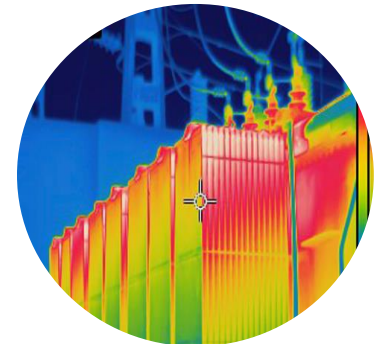
Perform inspections on critical assets



Create 3D image scans and models



Monitor for intruders



Run thermal scans

# Conclusion : Where , What and Who ?

Gartner

